CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
III–B.TECH–II–Semester End Examinations (Supply) - June- 2025
COMPILER DESIGN
(Common for CSE, IT, CSC, CSD)

[Time: 3 Hours]   **[Max. Marks: 70]**

Note: This question paper contains two parts A and B.
    Part A is compulsory which carries 20 marks. Answer all questions in Part A.
    Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A   (20 Marks)

1. a)	How many phases does analysis phase consists define it?	[2M]
b)	Define linker and loader	[2M]
c)	Why SLR and LALR are more economical to construct Canonical LR?	[2M]
d)	What are error recovery types?	[2M]
e)	Define S attribute grammar.	[2M]
f)	Explain the functions to create nodes of Syntax tree for expression.	[2M]
g)	List the different types of type checking.	[2M]
h)	Define peephole optimization.	[2M]
i)	Define local optimization.	[2M]
j)	Define flow graph and basic block.	[2M]

PART-B   (50 Marks)

2.	Explain the phases of a Compiler? Explain them in detail.	[10M]
	OR	
3.	Explain the different types of buffering methods used in input buffering.	[10M]
4.	Explain handle pruning in detail with example.	[10M]
	OR	
5.	Identify whether the following grammar is LR(0) with reasons.	[10M]
	$S \rightarrow xAy \mid xBy \mid xAz$, $A \rightarrow as \mid q$, $B \rightarrow q$	
6.	Discuss about variable length data on stack with neat diagram.	[10M]
	OR	
7.	Construct triples, Indirect and quadruples of an expression: $a = b * - c + b * - c$.	[10M]
8.	Explain briefly about language facilities for dynamic storage allocation.	[10M]
	OR	
9.	Differentiate explicit and implicit allocation of memory to variables.	[10M]
10.	Explain the principle sources of code optimization in detail.	[10M]
	OR	
11.	Construct optimal machine code for the following C program.	[10M]

```
main()
{
Int i, a[10];
while(i<=10)
a[i]=0;
}
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